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# SOT223 NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTORS

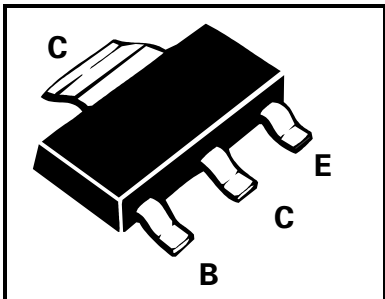
## FZT604 FZT605

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### FEATURES

- \* Guaranteed  $h_{FE}$  Specified up to 2A
- \* Fast Switching

PARTMARKING DETAIL - DEVICE TYPE IN FULL  
 COMPLEMENTARY TYPES - FZT604 - FZT704  
 FZT605 - FZT705



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	FZT604	FZT605	UNIT
Collector-Base Voltage	$V_{CBO}$	120	140	V
Collector-Emitter Voltage	$V_{CEO}$	100	120	V
Emitter-Base Voltage	$V_{EBO}$	10		V
Peak Pulse Current	$I_{CM}$	4		A
Continuous Collector Current	$I_C$	1.5		A
Power Dissipation	$P_{tot}$	2		W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150		°C

### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	FZT604 FZT605	$V_{(BR)CBO}$	120 140	V V	$I_C=100\mu\text{A}$ $I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	FZT604 FZT605	$V_{(BR)CEO}$	100 120	V	$I_C=10\text{mA}^*$ $I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	10	V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	FZT604	$I_{CBO}$	0.01 10	$\mu\text{A}$	$V_{CB}=100\text{V}$
	FZT605			$\mu\text{A}$	$V_{CB}=100\text{V}, T_{amb}=100^\circ\text{C}$
Collector Cut-Off Current	FZT604	$I_{CES}$	10	$\mu\text{A}$	$V_{CES}=100\text{V}$
	FZT605			$\mu\text{A}$	$V_{CES}=120\text{V}$
Emitter Cut-Off Current		$I_{EBO}$	0.1	$\mu\text{A}$	$V_{EB}=8\text{V}$
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	1.0, 1.5	V V	$I_C=250\text{mA}, I_B=0.25\text{mA}^*$ $I_C=1\text{A}, I_B=1\text{mA}^*$
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	1.8	V	$I_C=1\text{A}, I_B=1\text{mA}^*$
Base-Emitter Turn-On Voltage		$V_{BE(on)}$	1.7	V	$I_C=1\text{A}, V_{CE}=5\text{V}^*$
Static Forward Current Transfer Ratio		$h_{FE}$	2K 5K 2K 0.5K	100K	$I_C=50\text{mA}, V_{CE}=5\text{V}$ $I_C=500\text{mA}, V_{CE}=5\text{V}^*$ $I_C=1\text{A}, V_{CE}=5\text{V}^*$ $I_C=2\text{A}, V_{CE}=5\text{V}^*$

**FZT604**  
**FZT605**

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS
Transition Frequency	$f_T$	150		MHz	$I_C=100mA, V_{CE}=10V$ $f=20MHz$
Input capacitance	$C_{ibo}$	90 Typical		pF	$V_{EB}=500mV, f=1MHz$
Output Capacitance	$C_{obo}$	15 Typical		pF	$V_{CB}=10V, f=1MHz$
Switching Times	$t_{on}$	0.5 Typical		pF	$I_C=500mA, V_{CE}=10V$ $I_{B1} = I_{B2} = 0.5mA$
	$t_{off}$	1.6 Typical		pF	

\* Measured under pulsed conditions. Pulse width = 300 $\mu$ s. Duty cycle 2%

Spice parameter data is available upon request for these devices.

**FZT604**  
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**TYPICAL CHARACTERISTICS**

